

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
SURFACE WATER QUALITY DIVISION

Report of a Wastewater Survey

Conducted at

Chrysler Chemical
All Outfalls No. 820289
NPDES Permit No. MI0002411
Wayne County
Trenton, Michigan

July 15, 1986

US EPA RECORDS CENTER REGION 5



409663

Survey Comments

Wastewater monitoring was performed during one twenty-four hour survey period starting July 15, 1986. The sampling was done to determine facility compliance with water discharge regulations and to collect point source data for the Upper Great Lakes Study.

The survey results are compared to the facility's National Pollutant Discharge Elimination System (NPDES) permit final effluent limitations and to the facility's self-monitoring results for July 15 and 16, 1986 in Table 3. The survey results met the final permit limitations.

Samples of the effluent, outfall 003 (820090), were analyzed for a variety of parameters other than those limited by the permit including metals, organics and nutrients (Tables 1 and 2). The data will be further reviewed by Bureau staff to determine if additional monitoring or regulation is needed.

Plant Process

The facility is a chemical compounding plant that manufactures coatings, adhesives, sealants, lubricants and cutting oils for the automotive industry. Brake linings and disc pads for automobiles are also manufactured.

Water Supply

The facility obtains its cooling water from an intake on the Trenton Channel of the Detroit River. The river water is rough screened and during the summer is occasionally chlorinated prior to use. Domestic water, compressor cooling water and boiler make-up water is purchased from the City of Trenton. The boiler water is demineralized in the powerhouse before use.

Wastewater

Noncontact cooling water is used through out the plant for cooling heat exchangers, reactor vessels, mixers and air compressors. Outfall 001 discharges cooling water from heat exchangers used in the brake lining manufacturing process. Cooling jacket water and air compressor cooling water from the brake lining facility is discharged to outfall 002. Powerhouse compressors plus cooling water from pigment reduction and milling are discharged through outfall 003. Outfall 004 discharges cooling water from pigment mixing and reduction vessel cooling jackets. Pilot plant cooling water is discharged from outfall 005. All five outfalls receive roof drainage.

Wastewater (cont.)

Outfall 001 discharges to the Trenton Channel of the Detroit River through an open ditch. Outfalls 002 through 005 discharge to an enclosed portion of Monguagon Drain #2 which is tributary to the Trenton Channel. Runoff from the employees parking lot is discharged directly to this drain.

Boiler blowdown, condensate, softener backwash and process leakage are discharged to the facility's wastewater pretreatment system. The system also receives flows from the plant's off-loading areas and outside product and waste storage areas. The waste streams are treated in a series of settling lagoons where oils and solids are removed. The clarified effluent discharges to the City of Trenton sanitary sewer system.

Survey Procedure

The flows and samples were obtained as follows:

<u>Sample Location</u>	<u>Flow Measurement</u>	<u>Sampling Methods</u>
003 (820090)	Facility MOR	grab composite and individual grabs

Extractable organic and sulfide composite samples are collected by the grab composite method.

A grab composite consists of a series of individual grabs composited into one sample.

An individual grab is a single instantaneous sample.

Samples were analyzed by the Environmental Protection Bureau Laboratories located in Lansing.

Samples were preserved according to Table 5. Letter codes for laboratory results are defined in Table 7. The results of the physical, chemical and bacteriological analyses are presented in Tables 1 and 2. A parameter listing for the organic scans is presented in Table 6. Unless otherwise specified, all parameters in the scan were analyzed.

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Table 1 - Analyses of composite samples.

Outfalls	003
Survey period From	7-15-86 1100
To	7-16-86 1100
Computed Flow Rate (MGD)	(0.26)

General Chemistry

	<u>mg/l</u>	<u>lbs/day</u>
Suspended solids	25.0	54.2
Dissolved solids	180.0	390.3
Reactive silicon	0.5	1.08
BOD ₅	<4.0	-
Turbidity	12.0	-
COD	8.0	17.3
TOC	2.64	5.7
Nitrite & nitrate nitrogen-N	0.57	1.2
Nitrite nitrogen-N	0.025	0.05
Ammonia nitrogen-N	0.078	0.17
Kjeldahl nitrogen-N	0.41	0.89
Phosphorus-P	0.21	0.46
Orthophosphorus-P	0.008	0.02
Cyanide (total)	<0.005	-
Sulfide	<0.02	-
Alkalinity (total)	84.0	-
Alkalinity (CO ₃)	<5.0	-
Alkalinity (HCO ₃)	84.0	-
Calcium	30.0	65.1
Chloride	12.0	26.0
Fluoride	0.2	0.43
Potassium	1.4	3.04
Magnesium	8.0	17.3
Sodium	9.6	20.8
Sulfate	20.0	43.4
Conductivity (uMHOS/cm)	255.0	-
pH (SU)	7.5	-
Phenols (ug/l)	9.0	0.019

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Table 1 (cont.) - Analyses of composite samples.

Outfalls		003
Survey period From	7-15-86	1100
To	7-16-86	1100
Computed Flow Rate (MGD)		(0.26)

Metals

	<u>ug/l</u>	<u>lbs/day</u>
Total silver (Ag)	<0.5	-
Total aluminum (Al)	510.0	1.1
Total arsenic (As)	<2.5	-
Total barium (Ba)	23.7	0.05
Total beryllium (Be)	<1.0	-
Total cadmium (Cd)	1.0	0.002
Total cobalt (Co)	<10.0	-
Total chromium (Cr)	5.1	0.01
Hexavalent chromium (Cr ⁺⁶)	<5.0	-
Total copper (Cu)	21.4	0.05
Total iron (Fe)	1250.0	2.7
Total mercury (Hg)	<0.5	-
Total lithium (Li)	<8.0	-
Total molybdenum (Mo)	<10.0	-
Total nickel (Ni)	<4.0	-
Total lead (Pb)	4.7	0.01
Total antimony (Sb)	<2.5	-
Total selenium (Se)	<2.5	-
Total titanium (Ti)	<10.0	-
Total vanadium (V)	<10.0	-
Total <u>zinc</u> (Zn)	67.2	0.15

Organics

GC/MS BASE/NEUTRALS

	<u>ug/l</u>	<u>lbs/day</u>
All	ND	-

SCAN 8 - Phenols

	<u>ug/l</u>	<u>lbs/day</u>
2,4-Dinitrophenol	<40.0	-
2-Methyl-4,6-dinitrophenol	<40.0	-
4-Nitrophenol	<40.0	-
Pentachlorophenol	<40.0	-
All others	<10.0	-

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Table 2 - Analyses of grab samples.

Outfall	003	003	003	003
Date	7-15-86	7-15-86	7-15-86	7-16-86
Time	1100	1645	2045	1100

GENERAL CHEMISTRY(mg/l)

Dissolved oxygen	-	-	-	7.8
Oil & grease(grav)	-	-	-	2.7
Fecal coliform (counts/100ml)	-	-	-	500.0
Temperature (°F)	76.0	80.0	80.0	78.0
pH (SU)	6.7	6.8	6.9	7.0

ORGANICS(ug/l)

SCAN 1 - Purgeable Halocarbons

Chlorobenzene	-	-	-	<5.0
Methylene chloride	-	-	-	<5.0
All others	-	-	-	<1.0

SCAN 2 - Purgeable Aromatic Hydrocarbons

Total purgeable aromatic hydrocarbons	-	-	-	<5.0
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Table 3 - Comparison of survey results with the facility's NPDES Permit and Monthly Operating Report.

Outfall	Parameter	Unit	NPDES		July Monthly Operating Report					Survey Results ¹
			Permit Limitation		Month.		Month.		7-day	
			Month.	Month.	Month.	Month.	7-day	7-15	7-16	
			Ave.	Max.	Ave.	Max.	Ave.			
003 820090	Flow	MGD	-	-	0.26	0.26	-	-	-	-
	pH	SU	6 min to 9 max		8.0 min	8.1	-	-	-	7.5(6.7,6.8,6.9,7.0)
	Chlorine-TRC	mg/l	<0.2	0.3	0.01	0.01	-	-	-	0.0
	Oil & Grease	mg/l	-	10	0.4	0.6	-	-	-	<2.7>
	Temperature	° F	-	-	74	78	-	-	-	(76,76.80,78)
	Chlorine-App. time	min/day	-	160	120	120	-	-	-	-

1 - Survey results are for the composite sample. Grab sample results are shown in parentheses ().

Table 6 (cont.) - Organic Scan Parameter Listing.

SCAN 7 - Polynuclear Aromatic Hydrocarbons

Acenaphthene	Chrysene
Acenaphthylene	Dibenzo(a,h)anthracene
Anthracene	Fluoranthene
Benzo(a)anthracene	Fluorene
Benzo(b)fluoranthene	Indeno(1,2,3-cd)pyrene
Benzo(k)fluoranthene	Naphthalene
Benzo(ghi)perylene	Phenanthrene
Benzo(a)pyrene	Pyrene

SCAN 8 - Phenols

4-Chloro-3-methylphenol*	2-Nitrophenol
2-Chlorophenol	4-Nitrophenol
2,4-Dichlorophenol	Pentachlorophenol
2,4-Dimethylphenol	Phenol
2,4-Dinitrophenol	2,4,5-Trichlorophenol
2-Methyl-4,6-dinitrophenol**	2,4,6-Trichlorophenol

*Reported as 4-Chloro-m-cresol

**Reported as 4,6-Dinitro-o-cresol

SCAN 9 - Aromatic Amines (method not validated)

Curene(4,4'-Methylene(bis)2-chloroaniline)
3,3'-Dichlorobenzidine

GC/MS BASE/NEUTRALS

Acenaphthene	Di-n-octylphthalate
Acenaphthylene	1,2-Diphenylhydrazine
Anthracene	Fluoranthene
Benzidine	Fluorene
Benzo(a)anthracene (1,2, Benz- anthracene)	Hexachlorobenzene
Benzo(a)pyrene	Hexachlorobutadiene
Benzo(b)fluoranthene	Hexachlorocyclopentadiene
Benzo(g,h,i)perylene (1,12 benzo perylene)	Hexachloroethane
Benzo(k)fluoranthene	Indeno(1,2,3-cd)pyrene
Bis(2-chloroethoxy)methane	Isophorone
Bis(2-chloroethyl)ether	Naphthalene
Bis(2-chloroisopropyl)ether	Nitrobenzene
Bis(2-ethylhexyl)phthalate	N-Nitroso-di-n-propylamine
	N-Nitrosodiphenylamine
	Phenanthrene

Table 2 (cont.) - Organic Soln Parameter Listing.

GC/MS BASE/NEUTRALS (cont.)

4-Bromophenyl phenyl ether	Pyrene
Butyl benzyl phthalate	1,2,4-Trichlorobenzene
2-Chloronaphthalene	2-(methyl ethyl)phenyl
4-Chlorophenyl phenyl ether	4-methyl phenyl
Chrysene	4-(methyl ethyl)phenol
Dibenzo(a,h)anthracene	Tetradecanoic Acid
(1,2:5,6 dibenzanthracene)	Hexadecanoic Acid
1,2-Dichlorobenzene	Sulfur
1,3-Dichlorobenzene	Octadecanoic Acid
1,4-Dichlorobenzene	N,N-dibutyl,1-Butanwine
3,3'-Dichlorobenzidine	2,4-bis(1-methyl butyl)phenyl
Diethylphthalate	phenol
Dimethylphthalate	2-4-Dimethyphenol
Di-n-butylphthalate	3,4-Dmethyphenol
2,4-Dinitrotoluene	4-(1,1-dimethlethyl)phenol
2,6-Dinitrotoluene	

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Laboratory

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
GREAT LAKES AND ENVIRONMENTAL ASSESSMENT SECTION
OCTOBER 29, 1986

STAFF REPORT

AQUATIC TOXICITY ASSESSMENT OF CHRYSLER CORPORATION,
CHEMICAL DIVISION EFFLUENT, TRENTON, MICHIGAN

JULY 17-19, 1986
NPDES PERMIT MI0002411

The Michigan Department of Natural Resources' Great Lakes and Environmental Assessment Section conducted an in-lab, Daphnia magna static acute toxicity test on a grab sample of Chrysler Corporation, Chemical Division (003) effluent during the interval of July 17-19, 1986. The objectives of the study were to assess the acute toxicity of the effluent to D. magna and to determine the need for additional, more detailed toxicity evaluations at the facility.

SUMMARY AND RECOMMENDATIONS

1. Effluent from Chrysler Corporation, Chemical Division outfall 003 was not acutely toxic to D. magna during a 48 hour exposure.
2. Effluent from outfall 003 is not considered a priority candidate for additional acute toxicity tests at this time.

FACILITY DESCRIPTION

Chrysler Corporation, Chemical Division is a compounding and mixing plant that produces special chemical products for automobiles. The chief products of the plant are brake linings, paints, adhesives, sealants and lubricants.

Wastewater discharged from outfall 003 is comprised of rainfall runoff and noncontact cooling water from pigment reduction and milling operations. Outfall 003 discharges to the Detroit River via the Trenton Channel.

METHODS

On June 16, 1986, MDNR Surface Water Quality Division, Compliance Section #2 staff collected a grab sample of the effluent from Chrysler Corporation, Chemical Division's outfall 003 during a routine compliance inspection survey. The sample was transported to Lansing for aquatic toxicity testing and analytical chemical characterization. Sample preservation techniques and organic scan lists are given in Appendices A and B, respectively.

During the interval July 17-19, 1986, a 48-hour D. magna static acute toxicity test was conducted on the Chrysler Chemical grab sample in MDNR's Aquatic Toxicity Evaluation Laboratory. Test methods followed

procedures described in ASTM Standard D 4229. The grab sample and aerated, activated carbon-filtered Lansing city water (diluent) were used to prepare nominal test concentrations of 100, 60, 36, 22, 13, and 0 (control) percent effluent. Four replicate 250 ml glass beakers, each containing 150 ml of test solution, were prepared for each concentration. Beakers containing test solution, but no daphnids, were analyzed for dissolved oxygen, conductivity, pH, temperature, alkalinity, and hardness at the beginning of the exposure period. Beakers containing test solutions and daphnids were analyzed for the same parameters at the end of the sample interval.

D. magna neonates were used as test organisms. To obtain the neonates, gravid females from healthy MDNR cultures were isolated and fed. Five neonates randomly selected from these produced by the isolated females were placed in each test beaker. The neonates were observed immediately after introduction into the test beakers and after 24 and 48 hours of exposure to determine if any were trapped in the surface film. When trapped neonates were observed, they were gently freed with water drops. Counts of immobilized (unable to swim for 5 seconds when stimulated) neonates were made at 24 and 48 hours after all trapped neonates were freed from the surface.

RESULTS AND DISCUSSION

Chrysler Corporation, Chemical Division 003 effluent was not acutely toxic to D. magna during a 48 hour exposure (Table 1, 1a). These results suggest that the effluent meets the aquatic toxicity requirements of the Michigan Water Quality Standards.

Consistent with the toxicity test results, the concentrations of substances detected during analytical chemical characterization of the 003 effluent (Tables 2 and 3) were well below concentrations predicted to be acutely toxic to D. magna.

Based on the results of this study, Chrysler Corporation, Chemical Division's outfall 003 effluent is not considered a priority candidate for additional acute toxicity testing in the near future.

Report by: William F. Dimond, Aquatic Biologist, Great Lakes and
Environmental Assessment Section
Sample Collection by: Bill Stone, Environmental Quality Analyst,
Compliance Section #2, Northville Office
Aquatic Toxicity Testing by: William F. Dimond

Table 1. Percent immobilization of Daphnia magna exposed to selected concentrations of Chrysler Corporation, Chemical Division Outfall 003 from July 17-19, 1986.

<u>Percent Effluent</u>	<u>Percent Immobilization/Exposed Period</u>	
	<u>24 Hours</u>	<u>48 Hours</u>
0 (Control)*	0	0
10	0	0
20	0	0
30	0	0
60	0	0
100	0	0

*Control was carbon-filtered Lansing city water.

Table 1a. Chemical and physical characteristics of selected concentrations of sample from Chrysler Corporation, Chemical Division Outfall 003.

<u>Parameter</u>	<u>BEGIN:07/17/86</u>			<u>END:07/19/86</u>		
	<u>Control</u>	<u>22%</u>	<u>100%</u>	<u>Control</u>	<u>22%</u>	<u>100%</u>
Dissolved oxygen(mg/l)	8.6	8.9	9.3	8.5	8.6	8.6
D.O. saturation(%)	98	102	106	97	98	98
pH(S.U.)	8.0	7.7	7.6	7.8	7.8	8.2
Temperature(°C)	22.5	22.5	22.5	22.5	22.5	22.5
Conductivity(umhos/cm)	500	438	258	511	458	267
Alkalinity(mg/l)	36	20	106	32	46	86
Hardness(mg/l)	76	92	110	84	88	104

Table 2. Inorganic chemical characteristics of grab sample of Chrysler Corporation, Chemical Division Outfall 003.

Parameter	Grab	Grab a	Parameter	Grab	Grab a
	Date: 07/16/86 Time: 1100A	07/16/86 1100A		07/16/86 1100A	07/16/86 1100A
Aluminum b	510	517	Lead	4.7	5.9
Antimony	<2.5c	<2.5	Lithium	<8	<8
Arsenic	<2.5	<2.5	Magnesium	8,000	8,000
Barium	23.7	27.5	Mercury	<0.5	<0.5
Beryllium	<1	<1	Molybdenum	<10	<10
Cadmium	1	1	Nickel	<4	<4
Calcium (mg/l)	30	30.6	Potassium	1,400	1,500
Chloride (mg/l)	12	11	Silver	<0.5	<0.5
Chromium	5.1	5.9	Selenium	<2.5	<2.5
Hexavalent			Sodium	9,600	8,400
chromium	<5	<5	Sulfate(mg/l)	20	22
Cobalt	<10	<10	Titanium	<10	<10
Copper	21.4	22.5	Vanadium	<10	<10
Fluoride	200	200	Zinc	67.2	73
Iron	1,250	1,255			

a. Duplicate sample.

b. All units are in ug/l unless stated otherwise.

c. A "less than" sign indicates the substance was not detected; detection limit listed to right of "less than" symbol.

Table 3. Organic chemical characteristics of grab sample of Chrysler Corporation, Chemical Division Outfall 003.

Parameter	Grab	Grab a
	Date: 07/16/86 Time: 1100A	07/16/86 1100A
Methylene chloride	<5.0b	<5.0
Chlorobenzene	<5.0	<5.0
Other Scan 1	<1.0	<1.0
Scan 2	<5.0	<5.0
2,4-Dinitrophenol	<40.0	<40.0
4-Nitrophenol	<40.0	<40.0
1-Methyl-4,6-dinitrophenol	<40.0	<40.0
Pentachlorophenol	<40.0	<40.0
Other Scan 8	<10.0	<10.0
Diethyl phthalate	<1.0	2.0
Other Base-neutral GC/MS	N.D.d	N.D.
Oil and grease (mg/l)	2.70	5.20

a. Duplicate sample

b. All units are in ug/l unless stated otherwise

c. A "less than" sign indicates the substance was not detected; detection limit listed to right of "less than" symbol

d. Not detected; detection limit given in Appendix C

Table 4 General chemical characteristics of grab sample of Chrysler Corporation, Chemical Division Outfall 003

<u>Parameter</u>	Grab	Grab b
	Date: 7/16/86 Time: <u>11:00A</u>	7/16/86 <u>11:00A</u>
Total orthophosphate a	0.008	0.006
Total nitrites	0.025	0.025
Suspended solids	25	24
Total dissolved solids	180	180
Total sulfides	<0.02	<0.02
Total BOD-5	<4	<4
TOC	2.64	2.2
Total nitrites and nitrates	0.57	0.56
Total unionized ammonia	0.078	0.074
Total Kjeldahl nitrogen	0.41	0.4
Total phosphorus	0.21	0.156
Total recoverable phenols	9	8.7
Total cyanides	<0.005	<0.005

a: all units in mg/l unless stated otherwise

b: duplicate sample

Appendix A: Sample Preservation Techniques

<u>Parameter</u>	<u>Preservative</u>
TD TCO/Phenol/Nutrients (Chlorine Absent)	5 drops conc. H_2SO_4 /250 ml (to pH <2)
Phenols (Chlorine Present)	Dechlorinated w/ferrous ammonium sulfate (0.141 N) 1 drop/mg/l Cl_2 /250ml. H_2SO_4 to pH <2
Cyanide/Thiocyanates	Dechlorinate if needed with ascorbic acid (0.6 g/l), 10 drops 10 N NaOH (to pH ≥ 12)/250 ml.
DO	Fixed on site.
Total Metals	2 ml 1:1 HNO_3 /250 ml (to pH <2).
Dissolved Metals (Field Filtered)	2 ml 1:1 HNO_3 /250 ml (to pH <2).
Microbiology	2 drops 10% sodium thiosulfate/125 ml : dechlorinate sample.
Oil & Grease	10 drops conc. H_2SO_4 /250 ml (to pH <2)
Sulfides	10 drops 1M ZnAc/250 ml., 1 drop 10N NaOH to pH9/250 ml.
Base-neutral & Acid Extractables Purgeable Organics	Dechlorinated (if needed) with sodium thiosulfate (1 drop 0.141 N/mg/l Cl_2 /250 ml).

Samples preserved as required, cooled to 4°C with chain of custody maintained.

Lab Letter Codes

INT - Interference encountered during analysis resulted in no obtainable value.

U - Indicates material was analyzed for but not detected.

Appendix B
Organic Chemical Scan Parameters

SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	1,2-Dichloroethene (cis & trans)
Bromoform	1,2-Dichloropropane
Carbon tetrachloride	1,3-Dichloropropene (cis & trans)
Chlorobenzene	Methylene chloride
Chloroform	1,1,2,2-Tetrachloroethane
Dibromochloromethane	Tetrachloroethene
1,1-Dichloroethane	1,1,1-Trichloroethane
1,2-Dichloroethane	1,1,2-Trichloroethane
1,1-Dichloroethene	Trichloroethene

SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	Toluene
Ethylbenzene	Xylene isomers (o, m, and p)

SCAN 3 - Chlorinated Hydrocarbons, PCBs & Organochlorine Pesticides

Aldrin	1,4'-DDT
*Aroclor 1016	4,4'-DDT
*Aroclor 1221	1,2-Dichlorobenzene
*Aroclor 1232	1,3-Dichlorobenzene
Aroclor 1242	1,4-Dichlorobenzene
*Aroclor 1248	Heptachlor
Aroclor 1254	Heptachlor epoxide
Aroclor 1260	Hexabromobenzene
*Aroclor 1262	Hexachlorobenzene
*Aroclor 1268	Hexachlorobutadiene
g-BHC (lindane)	Hexachlorocyclopentadiene
BP-6 (PBB)	Hexachloroethane
a-Chlordane	Methoxychlor
g-Chlordane	Mirex
2-Chloronaphthalene	Pentachloronitrobenzene
4,4'-DDD	*Toxaphene
4,4'-DDE	1,2,4-Trichlorobenzene

SCAN 6 - Phthalate Esters & Polar Pesticides

Bis(2-ethylhexyl)phthalate	Di-n-octylphthalate
Butylbenzylphthalate	Dieldrin
Di-n-butylphthalate	Endosulfan I
Diethylphthalate	Endrin
Dimethylphthalate	

SCAN 7 - Polynuclear Aromatic Hydrocarbons

Acenaphthene	Chrysene
Acenaphthylene	Dibenzo(a,h)anthracene
Anthracene	Fluoranthene
Benzo(a)anthracene	Fluorene
Benzo(b)fluoranthene	Indeno(1,2,3-cd)pyrene
Benzo(k)fluoranthene	Naphthalene
Benzo(ghi)perylene	Phenanthrene
Benzo(a)pyrene	Pyrene

SCAN 8 - Phenols

4-Chloro-3-methylphenol ¹	2-Nitrophenol
2-Chlorophenol	4-Nitrophenol
2,4-Dichlorophenol	Pentachlorophenol
2,4-Dimethylphenol	Phenol
2,4-Dinitrophenol	2,4,5-Trichlorophenol
2-Methyl-4,6-dinitrophenol ²	2,4,6-Trichlorophenol

SCAN 9 - Aromatic Amines (method not validated)

Curene(4,4'-Methylene(bis)2-chloroaniline)
3,3'-Dichlorobenzidine

*Standards for these seldom encountered compounds are analyzed when their pattern is recognized. Results are coded as semi-quantitative (Type II).

¹Reported as 4-chloro-m-cresol

²Reported as 4,6-Dinitro-o-cresol

Appendix C
GC/MS Scan Parameters

Standard ^a RDL (ug/l)	Compound Name
2	Acenaphthene
1	Acenaphthylene
1	Anthracene
15	Benzidine
2	Benzo(a)anthracene (1,2 Benzaanthracene)
2	Benzo(a)pyrene
2 ^b	Benzo(b)fluoranthene
5 ^b	Benzo(g,h,i)perylene (1,12 benzo perylene)
2 ^b	Benzo(k)fluoranthene
2	Bis(2-chloroethoxy)methane
2	Bis(2-chloroethyl)ether
5	Bis(2-chloroisopropyl)ether
2	Bis(2-ethylhexyl)phthalate
5	4-Bromophenyl phenyl ether
2	Butyl benzyl phthalate
2	2-Chloronaphthalene
5	4-Chlorophenyl phenyl ether
2	Chrysene
5	Dibenzo(a,h)anthracene (1,2:5,6 dibenzanthracene)
2	1,2-Dichlorobenzene
2	1,3-Dichlorobenzene
2	1,4-Dichlorobenzene
10	3,3'-Dichlorobenzidine
2	Diethylphthalate
2	Dimethylphthalate
1	Di-n-butylphthalate
5	2,4-Dinitrotoluene
5	2,6-Dinitrotoluene
2	Di-n-octylphthalate
2	1,2-Diphenylhydrazine
1	Fluoranthene
2	Fluorene
5	Hexachlorobenzene
5	Hexachlorobutadiene
5	Hexachlorocyclopentadiene
5	Hexachloroethane
5	Indeno(1,2,3-cd)pyrene
1	Isophorone
1	Naphthalene
2	Nitrobenzene
5	N-Nitroso-di-n-propylamine
2	N-Nitrosodiphenylamine
1	Phenanthrene
1	Pyrene
2	1,2,4-Trichlorobenzene

- (a) For the actual RDL (reported detection limit) on a specific sample multiply the standard RDL above times the dilution factor reported on the result sheet.
- (b) Benzo(b)fluoranthene and Benzo(k)fluoranthene are calculated and reported as an isomeric pair.